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10/711,845

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Mathew J. Breitwisch

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EXAMINER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MATHEW J. BREITWISCH, CHUNG H. LAM,
and EDWARD J. NOWAK

Appeal 2007-4333
Application 10/711,845
Technology Center 2800

Decided: March 26, 2008

Before KENNETH W. HAIRSTON, ANITA PELLMAN GROSS, and
JOHN A. JEFFERY, *Administrative Patent Judges*.

GROSS, *Administrative Patent Judge*.

DECISION ON APPEAL
STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134 from the Examiner's Final Rejection of claims 1 through 7 and 27 through 39, which are all of the claims pending in this application. We have jurisdiction under 35 U.S.C. § 6(b).

Appellants' invention relates to an antifuse having a fin structure with a center portion and two end portions. Claim 1 is illustrative of the claimed invention, and it reads as follows:

1. An antifuse structure comprising:

a fin having a center portion and end portions,

wherein said center portion of said fin comprises a substantially non-conductive region adapted to permanently become a conductor when heated above a predetermined temperature,

wherein said end portions comprise conductors.

The prior art references of record relied upon by the Examiner in rejecting the appealed claims are:

Hsu	US 5,166,556	Nov. 24, 1992
Levy	US 5,469,379	Nov. 21, 1995

Claims 1 through 3 and 5 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Levy.

Claims 1 and 6 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Hsu.

Claims 4, 7, 27 through 31, and 33 through 38 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Levy.

Claims 27, 32, 34, and 39 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hsu.

We refer to the Examiner's Answer (mailed May 17, 2006) and to Appellants' Brief (filed March 1, 2006) for the respective arguments.

SUMMARY OF DECISION

As a consequence of our review, we will reverse the anticipation rejections of claims 1 through 3, 5, and 6 and the obviousness rejections of claims 4, 7, and 27 through 39.

OPINION

The Examiner asserts (Ans. 3) that Levy in Figure 2 shows an antifuse having a fin structure with center portion 58 and end portions 55 and 60. The Examiner asserts (Ans. 3) that "[a] 'fin' is understood to be a projection that extends from a body and it is quite clear to the examiner that the antifuse structure (layers 55, 58, 60) of Levy is a projection from a body (substrate 54)." Appellants contend (Br. 8) that Levy's antifuse structure is a via, not a fin structure. Appellants contend (Br. 9) that a "fin" is "commonly understood to be a thin projection (which can be rectangular) that extends from a surface." The first issue before us, therefore, is whether Levy's elements 55, 58, and 60 form a fin structure.

The definition of "fin" from Dictionary.com, attached to this decision, says "a membranous, winglike or paddlelike organ ...," "a horizontal ... winglike appendage," or "any part, as of a mechanism, resembling a fin." It is clear to us, therefore, that a fin structure is a relatively thin, substantially planar structure that projects from a surface. Levy discloses (col. 3, l. 43-col. 4, l. 2) link 58 made of an antifuse material between X-address line 60 and Y-address line 55. An X-address line runs perpendicular to a Y-address line. Thus, the combination of elements 55, 58, and 60 does not form a relatively thin, substantially planar structure. Accordingly, Levy fails to

disclose a fin, and we cannot sustain the anticipation rejection of claims 1 through 3 and 5 over Levy.

The Examiner (Ans. 4) asserts that Hsu in Figure 2 shows an antifuse having a fin structure with center portion 30 and end portions 26 and 32. Again the Examiner relies on his own broad interpretation of fin asserting (Ans. 5) that "antifuse structure (26, 30, 32) of Hsu is a projection from a body (22)." Appellants contend (Br. 14) that Hsu's antifuse has a V-shaped cross-section and is not in the shape of a fin. The second issue, therefore, is whether Hsu's elements 26, 30, and 32 form an antifuse with a fin structure.

Hsu discloses (col. 5, l. 66-col. 6, l. 27) antifuse layer 30 between refractory metal or metal silicide layers 26 and 32 wherein layer 26 is embedded in dielectric layer 22, and layers 30 and 32 are formed in a contact hole through dielectric 22. In other words, by the Examiner's own definition, elements 26, 30, and 32 do not form a fin as they do not project from layer 22. Further, we find no suggestion in Hsu of a fin shape for the antifuse. Consequently, we cannot sustain the anticipation rejection of claims 1 and 6 over Hsu.

The Examiner further rejects claims 4, 7, 27 through 31, and 33 through 38 as obvious over Levy (see Ans. 5) and claims 27, 32, 34, and 39 as obvious over Hsu (see Ans. 8). Each of claims 4, 7, and 27 through 39 includes a recitation of an antifuse structure comprising a fin. The Examiner has provided no rationale for changing the structure of either Levy or Hsu to form a fin type structure. Therefore, we cannot sustain the obviousness rejections of claims 4, 7, 27 through 31, and 33 through 38 over Levy and claims 27, 32, 34, and 39 over Hsu.

ORDER

The decision of the Examiner rejecting claims 1 through 3, 5, and 6 under 35 U.S.C. § 102(b) and claims 4, 7, and 27 through 39 under 35 U.S.C. § 103 is reversed.



REVERSED

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APPENDIX

17 results for: *fin*

fin:   **fin** - Show Spelled Pronunciation[fin] Pronunciation Key - Show IPA

Pronunciation *noun, verb*, **finned**, **fin·ning**.

—*noun*

1. a membranous, winglike or paddlelike organ attached to any of various parts of the body of fishes and certain other aquatic animals, used for propulsion, steering, or balancing.
2. *Nautical*.
 - a. a horizontal, often adjustable, winglike appendage to the underwater portion of a hull, as one for controlling the dive of a submarine or for damping the roll of a surface vessel.
 - b. FIN KEEL.
3. Also called vertical stabilizer. *Aeronautics*. any of certain small, subsidiary structures on an aircraft, designed to increase directional stability.
4. any of a number of standing ridges on an ordinarily hot object, as a radiator, a cylinder of an internal-combustion engine, etc., intended to maximize heat transfer to the surrounding air by exposing a large surface area.
5. any part, as of a mechanism, resembling a fin.
6. *Metallurgy*. a ridge of metal squeezed through the opening between two rolls, dies, or halves of a mold in which a piece is being formed under pressure. Compare FLASH (def. 11).
7. *Automotive*. an ornamental structure resembling an aeronautical fin that is attached to the body of an automobile, as on each rear fender (**tail fin**).
8. *Slang*. the arm or hand.
9. Usually, **fins**. FLIPPER (def. 2).

—*verb (used with object)*

10. to cut off the fins from (a fish); carve or cut up, as a chub.
11. to provide or equip with a fin or fins.

—*verb (used without object)*

12. to move the fins; lash the water with the fins, as a whale when dying.

[Origin: bef. 1000; ME, OE *finn*; c. D *vin*, LG *finne*; akin to Sw *fena*]

—*Related forms*

finless, *adjective*

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finlike, *adjective*

Dictionary.com Unabridged (v 1.1)

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